

FY2007 ONR YOUNG INVESTIGATORS

Expeditionary Maneuver Warfare and Combating Terrorism

- Dr. Ilyas Washington, Columbia University
Proposal Title: “Steps towards Increasing the Sensitivity of the Human Eye to Near Infrared Electromagnetic Radiation: The Design and Biological Testing of Red Vision Eye Drops and Vitamin Derivatives”
- Dr. Amanda Haes, University of Iowa
Proposal Title: “Engineering Novel Plasmonic Nanoparticles for Optimized Surface Enhanced Raman Spectroscopy”

Command, Control, Communications, Intelligence, Surveillance, and Reconnaissance (C4ISR)

- Dr. Ravi Ramamoorthi, Columbia University
Proposal Title: “Mathematical Models of Illumination and Reflectance for Image Understanding and Machine Vision”
- Dr. Tim Roughgarden, Stanford University
Proposal Title: “Design and Analysis of Resource Allocation Protocols for Large Communication Networks”
- Dr. Liuqing Yang, University of Florida
Proposal Title: “Wireless Cooperative Networks: Self-Configuration and Optimization”
- Dr. Min Ouyang, University of Maryland-College Park
Proposal Title: “Toward Molecular Spintronics: Organic Chiral Spin Valve & Optical Activated Spin Switch Devices”
- Dr. Mung Chiang, Princeton University
Proposal Title: “Towards an Analytic Foundation for Network Architectures”
- Dr. Massimo Franceschetti, University of California-San Diego
Proposal Title: “From Physics to Information, a Unified Approach to Diversity in Wireless Communication”
- Dr. Willie Padilla, Boston College
Proposal Title: “Novel Active Metamaterial Electronics at Terahertz Frequencies”
- Dr. Nian Sun, Northeastern University
Proposal Title: “Investigation of Electronically Tunable Miniaturized Patch Antennas on Low-loss Magnetoelectric Substrates with Enhanced Performance”

- Dr. Irfan Siddiqi, University of California-Berkeley
Proposal Title: “Dispersive Amplifiers Based on Ion-Damaged Planar High Temperature Superconducting Josephson Junctions”

Ocean Battlespace Sensing

- Dr. Maya Gupta, University of Washington
Proposal Title: “Joint Signal Deconvolution and Declassification”
- Dr. Ryan Eustice, University of Michigan
Proposal title: “Real-Time Visually Augmented Navigation for Autonomous Search and Inspection of Ship Hulls and Port Facilities”
- Dr. Shengli Zhou, University of Connecticut
Proposal Title: “The Next Milestone: A Multicarrier Acoustic MODEM with Channel- and Network-Adaptivity for Underwater Autonomous Distributed Systems”
- Dr. Jim Thomson, University of Washington-APL
Proposal Title: “Detecting and Applying Thermal Signals in a Tidal Flat Environment”
- Dr. Purnima Ratilal, Northeastern University
Proposal Title: “Determining the Characteristics and Mechanisms for Biological Clutter and Environmental Reverberation and their impact on Long Range Sonar Performance in Range-dependent Fluctuating Ocean Waveguides”

Sea Warfare and Weapons

- Dr. David Singer, University of Michigan
Proposal Title: “Development and Testing of a Hybrid Agent Approach for Set-Based Conceptual Ship Design through the use of a Type-2 Fuzzy Logic Agent to Facilitate Communications and Negotiation”
- Dr. Adrienne Stiff-Roberts, Duke University
Proposal Title: “Hybrid Nanomaterials for Multi-Spectral Infrared Photodetection”
- Dr. Ganesh Venayagamoorthy, University of Missouri-Rolla
Proposal Title: “The Intelligent All-Electric Ship Power System”
- Dr. Stefano Curtarolo, Duke University
Proposal Title: “High-Throughput Ab Initio Combinatorial Materials Characterization of Oxidation Resistant Titanium Alloys and Novel Boride Superconductors”
- Dr. Shriram Ramanathan, Harvard University

Proposal Title: “Novel High-Resolution Experimental Approaches to Investigate Nanoscale Corrosion Phenomena in Metals and Alloys”

- Dr. Andrew Wilhite, University of Connecticut
Proposal Title: “Heat-Integrated Hydrogen Production from Liquid Fuels: Creation of Scalable, Cartridge Based Microreactor Reformers”
- Dr. Jeffrey Pyun, University of Arizona
Proposal Title: “Functional Magnetic Nanoparticles as Templates for Nanostructured Carbon: Novel Self-Assembling Materials for Supercapacitors”
- Dr. Ionnis Chasiotis, University of Illinois-Urbana/Champaign
Proposal Title: “Continuous Carbon Nanofibers with Modulated Surface for Polymer Nanocomposites”
- Dr. William King, University of Illinois-Urbana/Champaign
Proposal Title: “Nanoscale Measurements of Temperature and Thermal Properties for Applications in Thermal Management and Energy Harvesting”

Warfighter Performance

- Dr. Sibani Biswal, Rice University
Proposal Title: “Building Responsive and Structured Assemblies with Magnetic Colloids”
- Dr. Kirill Larin, University of Houston
Proposal Title: “Novel Method of Noninvasive Detection and Assessment of Gas Emboli and DCS”
- Dr. Debra Auguste, Harvard University
Proposal Title: “Targeting Vasopressin Encapsulating Liposomes to Injured Endothelial Cells for Hemorrhagic Shock Therapy”
- Dr. Melik Demirel, Pennsylvania State University
Proposal Title: “Hierarchically and Spatially Organized Polymer Coatings for Marine Antifouling Applications”
- Dr. Yingzi Du, Indiana University
Proposal Title: “Selective Feature Based Iris Recognition for Noncooperative User Identification”
- Dr. Mariana Figueiro, Rensselaer Polytechnic Institute
Proposal Title: “Alerting Effects of Light at Different Circadian Phases in Humans”

Naval Air Warfare and Weapons

- Matthew Oehlschlaeger, Rensselaer Polytechnic Institute
Proposal Title: “Mid-Infrared Laser Absorption Diagnostics for Characterization, Monitoring, and Control of Combustion and Fuel Cell Power Generation and Propulsion Devices”

Office of Transition

- Gary Cheng, University of Houston
Proposal Title: “Warm Laser Shock Peening: A New Technique for Stabilized Fatigue Life and Stress Corrosion Resistance in Metals”